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Minako Kato

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EXAMINER

MENBERU, BENIYAM

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/656,103	Applicant(s) KATO, MINAKO	
	Examiner BENIYAM MENBERU	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-40 is/are pending in the application.
- 4a) Of the above claim(s) 1-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/20/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group II and Species II in the reply filed on March 5, 2008 is acknowledged. The traversal is on the ground(s) that the prosecution of a single application would be of less burden to the Office. This is not found persuasive because the image processing method disclosed in Group I based on varying the amount of ink which is classified under class 358, subclass 3.11 and 3.12 is a different invention than the image processing method disclosed in Group II based on varying the printing density which is classified under class 358, subclass 3.1, which would require further consideration and/or search.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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2. Claims 25, 26, 28, 29 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6786578 to Aschman et al.

Regarding claim 25, Aschman et al '578 discloses an image processing apparatus comprising:

a unit for outputting a color material for primary color reproduction in a way that does not mix the color material and another color material in a first mode of using only dark color materials (Figure 2, reference 20 are print heads (26-2,1 26-2,2 26-2,3 26-2,4 which are the dark color heads) that output different coloring material (column 4, lines 12-14, 25-44) which reads on a unit for outputting color material; column 3, lines 43-52; In the second mode of Aschman et al '578, only CMYK are used which read on only dark color materials (column 4, lines 32-44)); and

a unit for outputting a color material for primary color reproduction in a way that mixes the color material and another color material in a second mode of using both dark color materials and light color materials (Figure 2, reference 20 are print heads (26-2,1 26-2,2 26-2,3 26-2,4 which are the dark color heads and 26-1,4 26-1,3 26-1,2 26-1,1 are light color heads) that output different coloring material (column 4, lines 12-14, 25-44) which reads on a unit for outputting color material; column 3, lines 43-52; In the first mode of Aschman et al '578, light cyan, light magenta, light yellow, and light black are used in addition to the dark cyan, magenta, yellow, and black are used(column 4, lines 32-44)).

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Regarding claim 26, Aschman et al '578 discloses the image processing apparatus of claim 25, wherein the first mode is a fast printing mode and the second mode is a mode in which image quality is higher than that in the first mode (column 3, lines 43-52; In the second mode of Aschman et al '578, only CMYK are used which read on only dark color materials (column 4, lines 32-44). The second mode is faster (column 3, lines 52-55); column 3, lines 43-52; In the first mode of Aschman et al '578, light cyan, light magenta, light yellow, and light black are used in addition to the dark cyan, magenta, yellow, and black are used (column 4, lines 32-44). The first mode is for better quality (column 3, lines 52-55).).

Regarding claim 28, Aschman et al '578 discloses the image processing apparatus of claim 25, wherein the dark color materials are K, C, M and Y inks (column 4, lines 32-44).

Regarding claim 29, Aschman et al '578 discloses the image processing apparatus of claim 25, wherein the light color materials are light cyan and light magenta inks (column 4, lines 32-44).

Regarding claim 30, Aschman et al '578 discloses an image processing apparatus for forming an image by using dark color materials and light color materials (column 4, lines 32-44), the apparatus comprising:

a unit for forming an image by using the dark color material of a first color for primary color reproduction in a fast printing mode (Figure 2, reference 20 are print heads (26-2,1 26-2,2 26-2,3 26-2,4 which are the dark color heads) that

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output different coloring material (column 4, lines 12-14, 25-44) which reads on a unit for forming an image; column 3, lines 43-52; In the second mode of Aschman et al '578, only CMYK are used which read on only dark color materials (column 4, lines 32-44). The second mode is faster (column 3, lines 52-55).); and a unit for forming an image by using a first light color material associated with the first dark color material and a second light color material different from the first light color material for primary color reproduction in a high image quality mode (Figure 2, reference 20 are print heads (26-1,4 is first light color material associated with dark material 26-2,4 and 26-1,3 is second light material different from 26-1,4) that output different coloring material (column 4, lines 12-14, 25-44) which reads on a unit for forming an image; column 3, lines 43-52; In the first mode of Aschman et al '578, light cyan, light magenta, light yellow, and light black are used in addition to the dark cyan, magenta, yellow, and black are used(column 4, lines 32-44). The first mode is for better quality (column 3, lines 52-55).).

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 31- 40 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4713701 to Kawamura et al.

Regarding claim 31, Kawamura et al '701 discloses an image processing method of converting image data composed of R, G, and B colors into one or more pixel data corresponding to color materials for a plurality of ejection units which eject the respective color materials and two of which eject color materials of the same color or similar shades (Figure 5a, MTX circuit converts RGB to YMC BL pixel data (column 3, lines 31-32; column 4, lines 3-17). There are two ink heads with different concentration (column 3, lines 14-22) for each color material as shown Figure 2, and in Figure 5b which shows the head circuit for each color CMYB (column 4, lines 17-24, 40-55).), the method comprising the steps of:

selecting either a first mode using one ejection unit that has high-density of a color material for color materials of the same color or similar shades and a second mode using all of the ejection units (column 4, lines 39-43; column 5, lines 9-27; The first mode of Kawamura et al '701 uses only high-density and the third mode of Kawamura et al '701 uses all density (high and low) units.);

operating, if the first mode is selected, to convert the image data in which two of the colors R, G, and B have their maximum values and which represent a primary color into the one pixel data corresponding to the primary color (In the first mode only high density of each color CMY BL is used in the ink jet heads.

The conversion of RGB data to CMYBL (Figure 5a, MTX circuit converts RGB to

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YMC BL pixel data (column 3, lines 31-32; column 4, lines 3-17)) results in only one of two ink jet heads (high density pixel) being used in the example of cyan ink head which is a primary color (column 4, lines 4-25, 39-43, 52-54).); and operating, if the second mode is selected, to convert the image data which represents the primary color into the plurality of pixel data constituting hues equal to the primary color (Figure 5a, MTX circuit converts RGB to YMC BL pixel data (column 3, lines 31-32; column 4, lines 3-17); In the third mode of Kawamura et al '701, both high-density and low-density inks of same hue are used (plurality of pixel) for printing which applies to the example of cyan (primary color) (column 4, lines 4-25, 39-43, 51-54).).

Regarding claim 32, Kawamura et al '701 discloses an image processing method according to claim 31, wherein the plurality of pixel data in the second converting step includes a first color pixel data and a second color pixel data (Figure 5b shows two pixel generating units for each primary colors (see H1, H2 corresponding to two density data (column 4, lines 18-22).).

Regarding claim 33, see rejection of claim 31 as shown above.

Regarding claim 34, see rejection of claim 32 as shown above.

Regarding claim 35, see rejection of claim 31 as shown above. Further Kawamura et al '701 discloses causing the image processing apparatus to generate output data from a plurality of pixel data obtained in the first converting

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step or the second converting step, the output data being outputted by the image output apparatus (column 3, lines 16-24; printer uses the ink heads to output image data received from the conversion matrix (MTX) as shown in Figure 5a.).

Regarding claim 36, see rejection of claim 32 as shown above.

Regarding claim 37, see rejection of claim 35 as shown above. Further Kawamura et al '701 discloses a data generating unit (column 3, lines 16-24; printer uses the ink heads (data generating unit) to output image.).

Regarding claim 38, see rejection of claim 32 as shown above.

Regarding claim 39, see rejection of claim 31 as shown above.

Regarding claim 40, see rejection of claim 32 as shown above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6786578 to Aschman et al in view of U.S. Patent No. 6717601 to Sanger further in view of U.S. Patent No. 6592212 to Kakutani.

Regarding claim 27, Aschman et al '578 teaches all the limitations of claim 25. However Aschman et al '578 does not disclose wherein the first mode is a mode for lowering granularity.

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Kakutani '212 discloses a mode for lowering granularity (column 25, lines 34-38; column 41, lines 17-35; addition of Dark yellow (DY) helps to lower granularity.).

Having the system of ***Aschman et al '578*** and then given the well-established teaching of Kakutani '212, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Aschman et al '578*** as taught by ***Kakutani '212***, since ***Kakutani '212*** stated in col. 7, Lines 1-7, such a modification would provide better quality for the picture.

However Aschman et al '578 does not disclose the second mode is a mode for color matching.

Sanger '601 discloses a mode for color matching (column 3, lines 6-12; color matching is achieved by adding light color materials.).

Having the system of ***Aschman et al '578*** and then given the well-established teaching of ***Sanger '601***, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of ***Aschman et al '578*** as taught by ***Sanger '601***, since ***Sanger '601*** stated in col. 3, Lines 4-12, such a modification would provide improved resolution and control in the proof for color matching.

Other Prior Art Cited

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 7240988 to Gardner et al discloses printing system.

U.S. Patent No. 5982990 to Gondek discloses color conversion.

U.S. Patent No. 6509916 to Kakinuma et al discloses printing with varying concentration of ink material.

U.S. Patent No. 6053595 to Otsuka et al discloses ink jet printing system.

U.S. Patent No. 6962404 to Nunokawa et al discloses plural printing modes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENIYAM MENBERU whose telephone number is (571) 272-7465. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (571) 272-2600. The group receptionist number for TC 2600 is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

Beniyam Menberu

/Beniyam Menberu/
Examiner, Art Unit 2625

06/13/2008

/David K Moore/

Supervisory Patent Examiner, Art Unit 2625